

Amendment to the Claims:

Please amend the claims as follows.

Please cancel claims 18, 22, 32, 35 and 36, without prejudice of disclaimer.

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 (previously presented): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity comprising an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:46, or encoded by a nucleic acid encoding a polypeptide having endoglucanase or cellulase activity and having at least 95% sequence identity to the polynucleotide sequence of SEQ ID NO:45.

Claim 2 (previously presented): An isolated, synthetic or recombinant polynucleotide comprising a sequence encoding the endoglucanase or cellulase of claim 1, or comprising a nucleic acid sequence encoding a polypeptide having endoglucanase or cellulase activity and having at least 95% sequence identity to the polynucleotide sequence of SEQ ID NO:45.

Claim 3 (canceled)

Claim 4 (previously presented): The isolated, synthetic or recombinant polynucleotide of claim 2, wherein the polynucleotide is isolated from a prokaryote.

Claim 5 (previously presented): A vector comprising a nucleic acid having a sequence as set forth in claim 2.

Claim 6 (previously presented): The vector of claim 5, wherein the vector comprises a plasmid.

Claim 7 (previously presented): The vector of claim 5, wherein the vector comprises virus-derived sequences.

Claim 8 (previously presented): An isolated host cell comprising the vector of claim 5.

Claim 9 (previously presented): The host cell of claim 8, wherein the cell is prokaryotic.

Claims 10 to 13 (canceled)

Claim 14 (previously presented): A method for producing an enzyme comprising (a) (i) growing a host cell of claim 8 under conditions which allow the expression of the enzyme-encoding nucleic acid and (ii) isolating the enzyme encoded by the nucleic acid, or (b) the method of (a), wherein the cell is a plant cell, a yeast cell, a bacterial cell, a fungal cell, an insect cell or an animal cell.

Claim 15 (previously presented): A method for degrading carboxymethylcellulose comprising contacting a carboxymethylcellulose with an effective amount of the polypeptide of claim 60.

Claim 16 (previously presented): A method for hydrolyzing a beta 1,4 glycosidic bond in a cellulose comprising contacting an effective amount of the polypeptide of claim 60 with the cellulose to hydrolyze the glycosidic bond.

Claims 17 and 18 (canceled)

Claim 19 (previously presented): The isolated, synthetic or recombinant nucleic acid of claim 37, wherein the nucleic acid that hybridizes under stringent conditions to the polynucleotide sequence of SEQ ID NO:45 has at least 97% sequence identity to the polynucleotide of SEQ ID NO:45.

Claim 20 (currently amended): The isolated, synthetic or recombinant nucleic acid polypeptide of claim 19, wherein the nucleic acid has the polynucleotide sequence of SEQ ID NO:45.

Claims 21 and 22 (canceled)

Claim 23 (previously presented): The isolated, synthetic or recombinant polypeptide of claim 22, wherein the polypeptide has the amino acid sequence of SEQ ID NO:46.

Claim 24 (previously presented): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the polypeptide has endoglucanase activity.

Claim 25 (previously presented): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the polypeptide has cellulase activity.

Claim 26 (previously presented): The isolated, synthetic or recombinant polypeptide of claim 25, wherein the cellulase activity comprises a carboxymethyl cellulase activity.

Claim 27 (previously presented): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity comprising (a) a polypeptide having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:46, (b) a polypeptide encoded by a nucleic acid encoding a polypeptide having endoglucanase or cellulase activity and having at least 95% sequence identity to the polynucleotide sequence of SEQ ID NO:45, or (c) enzymatically active fragments of (a) or (b).

Claim 28 (canceled)

Claim 29 (previously presented): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity comprising a polypeptide having the amino acid sequence of SEQ ID NO:46, or enzymatically active fragments thereof.

Claim 30 (canceled)

Claim 31 (currently amended): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity comprising the amino acid sequence of SEQ ID NO:46 and having at least one conservative amino acid substitution, wherein the conservative amino acid substitution comprises: a replacement, one for another, among the aliphatic amino acids Ala, Val, Leu and Ile; or an interchange of the hydroxyl residues Ser and Thr; or an exchange of the acidic residues Asp and Glu; or a substitution between the amide residues Asn and Gln; or an exchange of the basic residues Lys and Arg; or a replacement among the aromatic residues Phe, Tyr,

wherein the polypeptide has an amino acid sequence having at least 95% ~~[[90%]]~~ sequence identity to the amino acid sequence of SEQ ID NO:46, or the polypeptide is encoded by a nucleic acid having at least 95% ~~[[90%]]~~ sequence identity to the polynucleotide sequence of SEQ ID NO:45.

Claims 32 to 36 (canceled)

Claim 37 (previously presented): An isolated, synthetic or recombinant nucleic acid encoding a polypeptide having endoglucanase or cellulase activity, wherein the nucleic acid hybridizes under stringent conditions to the polynucleotide sequence of SEQ ID NO:45, and the stringent conditions comprise a wash step comprising a wash for 30 minutes at room temperature in a solution comprising 150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na₂EDTA, 0.5% SDS, followed by 30 minute wash in fresh solution at T_m-10°C.

Claim 38 (previously presented): The host cell of claim 8, wherein the cell is a plant cell.

Claim 39 (previously presented): The host cell of claim 8, wherein the cell is a yeast cell, a bacterial cell, a fungal cell, an insect cell or an animal cell.

Claims 40 to 43 (canceled)

Claim 44 (previously presented): A method for converting plant biomass into fuels or chemicals comprising contacting a plant biomass comprising cellulose with an effective amount of a polypeptide of claim 60, thereby hydrolyzing the cellulose for converting the plant biomass into a fuel or a chemical.

Claim 45 (currently amended): The method of claim 15 ~~[[or 16]]~~, wherein the method comprises contacting a carboxymethylcellulose with an effective amount of the polypeptide in a, or with, a is employed in the detergent and textile industry.

Claim 46 (currently amended): The method of claim 15 ~~[[or 16]]~~, wherein the method comprises contacting a carboxymethylcellulose with an effective amount of the polypeptide in a, or with, produces an animal feed.

Claim 47 (currently amended): The method of claim 15 ~~[[or 16]]~~, wherein the method comprises contacting a carboxymethylcellulose with an effective amount of the polypeptide in a, or with, a is employed in waste treatment for degrading carboxymethylcellulose or for hydrolyzing a beta 1,4 glycosidic bond in a cellulose.

Claim 48 (currently amended): The method of claim 15 ~~[[or 16]]~~, wherein the method comprises contacting a carboxymethylcellulose with an effective amount of the polypeptide in a, or with, is employed in a fruit juice industry or a brew brewing industry for the clarification or extraction of juices or brews.

Claim 49 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 60, wherein the polypeptide is contained in ~~further comprises~~ a textile.

Claim 50 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 60, wherein the polypeptide is contained in ~~further comprises~~ a feed.

Claim 51 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 60, wherein the polypeptide is contained in ~~further comprises~~ a detergent.

Claim 52 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 60, wherein the polypeptide is contained in ~~further comprises~~ a juice or a brew.

Claim 53 (previously presented): An isolated host cell comprising (a) a heterologous nucleic acid having the sequence of claim 37, or (b) the host cell of (a), wherein the cell is a plant cell, a yeast cell, a bacterial cell, a fungal cell, an insect cell or an animal cell.

Claim 54 (previously presented): The isolated, synthetic or recombinant nucleic acid claim 37, wherein the nucleic acid that hybridizes under stringent conditions to the polynucleotide sequence SEQ ID NO:45 has at least 95% sequence identity to the polynucleotide of SEQ ID NO:45.

Claim 55 (previously presented): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the cellulose activity comprises a carboxymethylcellulose activity.

Claims 56 to 59 (canceled)

Claim 60 (currently amended): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity comprising an amino acid sequence having at least 95% ~~[[90%]]~~ sequence identity to the amino acid sequence of SEQ ID NO:46, or encoded by a nucleic acid

having at least 95% ~~[[90%]]~~ sequence identity to the polynucleotide sequence of SEQ ID NO:45, or enzymatically active fragments thereof.

Claim 61 (previously presented): An isolated, synthetic or recombinant polynucleotide sequence encoding an endoglucanase or cellulase of claim 60.

Claim 62 (previously presented): A method for producing an enzyme comprising growing a host cell of claim 53 under conditions which allow the expression of the nucleic acid and isolating the enzyme encoded by the nucleic acid.

Claim 63 (currently amended): A method for degrading carboxymethylcellulose comprising (i) expressing the nucleic acid of claim 37 to generate a recombinant enzyme, and (ii) contacting a carboxymethylcellulose with an effective amount of the recombinant enzyme of (i) a polypeptide encoded by the nucleic acid of claim 37.

Claim 64 (currently amended): A method for hydrolyzing a beta 1,4 glycosidic bond in a cellulose comprising (i) expressing the nucleic acid of claim 37 to generate a recombinant enzyme, and (ii) contacting an effective amount of the recombinant enzyme of (i) a polypeptide encoded by the nucleic acid of claim 37, with the cellulose to hydrolyze the glycosidic bond.

Claim 65 (currently amended): An isolated, synthetic or recombinant polypeptide encoded by the nucleic acid of claim 37, wherein the polypeptide is contained in ~~further comprises~~ a textile.

Claim 66 (currently amended): An isolated, synthetic or recombinant polypeptide encoded by the nucleic acid of claim 37, wherein the polypeptide is contained in ~~further comprises~~ a feed.

Claim 67 (currently amended): An isolated, synthetic or recombinant polypeptide encoded by the nucleic acid of claim 37, wherein the polypeptide is contained in ~~further comprises~~ a detergent.

Claim 68 (currently amended): A vector comprising a nucleic acid having the nucleic acid sequence of claim ~~[[32]]~~71.

Claim 69 (previously presented): A vector comprising a nucleic acid having the nucleic acid sequence of claim 37.

Claim 70 (currently amended): An isolated host cell comprising (a) the nucleic acid of claim ~~[[32]]~~71, or (b) the host cell of (a), wherein the cell is a plant cell, a yeast cell, a bacterial cell, a fungal cell, an insect cell or an animal cell.

Claim 71 (previously presented): An isolated, synthetic or recombinant nucleic acid encoding the polypeptide of claim 29.

Claim 72 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 60, wherein the polypeptide is contained in ~~further comprises~~ a biomass.

Claim 73 (currently amended): An isolated, synthetic or recombinant polypeptide encoded by the nucleic acid of claim 37, wherein the polypeptide is contained in ~~further comprises~~ a juice or a brew.

Claim 74 (currently amended): An isolated, synthetic or recombinant polypeptide encoded by the nucleic acid of claim 37, wherein the polypeptide is contained in ~~further comprises~~ a biomass.

Claim 75 (new): The method of claim 15, wherein the method comprises contacting a carboxymethylcellulose with an effective amount of the polypeptide in a, or with, a textile.

Claim 76 (new): The method of claim 16, wherein the method comprises contacting a cellulose with an effective amount of the polypeptide in a, or with, a detergent.

Claim 77 (new): The method of claim 16, wherein the method comprises contacting a cellulose with an effective amount of the polypeptide in a, or with, a textile.

Claim 78 (new): The method of claim 16, wherein the method comprises contacting a cellulose with an effective amount of the polypeptide in a, or with, an animal feed.

Claim 79 (new): The method of claim 16, wherein the method comprises contacting a cellulose with an effective amount of the polypeptide in a, or with, a waste.

Claim 80 (new): The method of claim 16, wherein the method comprises contacting a cellulose with an effective amount of the polypeptide in a, or with, juice or a brew for the clarification or extraction of juices or brews.